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a first probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of a first target sequence, and an addressable support-specific portion that is specific for the first target sequence, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the first target sequence, and a 3' primer-specific portion;

a second probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of a second target sequence, and an addressable support-specific portion that is specific for the second target sequence, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the second target sequence, and a 3' primer-specific portion;

and wherein the 5' primer-specific portions of each of the at least one first probes of the first and second probe sets have identical sequences.

121. The kit of claim 52, wherein the at least one probe set comprises:

at least six different probe sets for detecting at least six different target sequences, wherein each of the at least six different probe sets is specific for a different target sequence and comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of one of the at least six different target sequences, and an addressable support-specific portion that is

specific for the one of the at least six different target sequences, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the one of the at least six different target sequences, and a 3' primer-specific portion;

and wherein the 5' primer-specific portions of each of the at least one first probes of each of the at least six different probe sets have identical sequences.

122. The kit of claim 52, wherein the at least one probe set comprises:

at least two different probe sets for detecting at least two different target sequences, and wherein

a first probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of a first target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the first target sequence, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the first target sequence, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

a second probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of a second target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the second target sequence, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the second

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target sequence, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

and wherein the 3' primer-specific portions of each of the at least one second probes of the first and second probe sets have identical sequences.

123. The kit of claim 52, wherein the at least one probe set comprises:

at least six different probe sets for detecting at least six different target sequences, wherein each of the at least six different probe sets is specific for a different target sequence and comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of one of the at least six different target sequences, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the one of the at least six different target sequences, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the one of the at least six different target sequences, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

and wherein the 3' primer-specific portions of each of the at least one second probes of each of the at least six different probe sets have identical sequences.

124. The kit of claim 60, wherein the at least one probe set comprises:

at least two different probe sets for detecting at least two different target sequences, and wherein

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a first probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of a first target sequence, and an addressable support-specific portion that is specific for the first target sequence, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the first target sequence, and a 3' primer-specific portion;

a second probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of a second target sequence, and an addressable support-specific portion that is specific for the second target sequence, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the second target sequence, and a 3' primer-specific portion;

and wherein the 5' primer-specific portions of each of the at least one first probes of the first and second probe sets have identical sequences.

125. The kit of claim 60, wherein the at least one probe set comprises:

at least six different probe sets for detecting at least six different target sequences, wherein each of the at least six different probe sets is specific for a different target sequence and comprises (a) at least one first probe, comprising a 5' primer-specific portion, a target-specific portion that hybridizes to a first portion of one of the at least six different target sequences, and an addressable support-specific portion that is

specific for the one of the at least six different target sequences, wherein the addressable support-specific portion is located between the 5' primer-specific portion and the target-specific portion, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the one of the at least six different target sequences, and a 3' primer-specific portion;

and wherein the 5' primer-specific portions of each of the at least one first probes of each of the at least six different probe sets have identical sequences.

126. The kit of claim 60, wherein the at least one probe set comprises:

at least two different probe sets for detecting at least two different target sequences, and wherein

a first probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of a first target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the first target sequence, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the first target sequence, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

a second probe set comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of a second target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the second target sequence, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the second

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target sequence, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

and wherein the 3' primer-specific portions of each of the at least one second probes of the first and second probe sets have identical sequences.

127. The kit of claim 60, wherein the at least one probe set comprises:

at least six different probe sets for detecting at least six different target sequences, wherein each of the at least six different probe sets is specific for a different target sequence and comprises (a) at least one first probe, comprising a 5' primer-specific portion, and a target-specific portion that hybridizes to a first portion of one of the at least six different target sequences, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the one of the at least six different target sequences, a 3' primer-specific portion, and an addressable support-specific portion that is specific for the one of the at least six different target sequences, wherein the addressable support-specific portion is located between the 3' primer-specific portion and the target-specific portion;

and wherein the 3' primer-specific portions of each of the at least one second probes of each of the at least six different probe sets have identical sequences.

128. The kit of claim 71, wherein the at least one probe set comprises:

at least two different probe sets for detecting at least two different target sequences, and wherein

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a first probe set comprises (a) at least one first probe, comprising a target-specific portion that hybridizes to a first portion of a first target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the first target sequence, a primer-specific portion, and an addressable support-specific portion that is specific for the first target sequence, wherein the addressable support-specific portion is located between the primer-specific portion and the target-specific portion;

a second probe set comprises (a) at least one first probe, comprising a target-specific portion that hybridizes to a first portion of a second target sequence, and (b) at least one second probe, comprising a target-specific portion that hybridizes to a second portion of the second target sequence, a primer-specific portion, and an addressable support-specific portion that is specific for the second target sequence, wherein the addressable support-specific portion is located between the primer-specific portion and the target-specific portion;

and wherein the primer-specific portions of each of the at least one second probes of the first and second probe sets have identical sequences.

129. The kit of claim 71, wherein the at least one probe set comprises:

at least six different probe sets for detecting at least six different target sequences, wherein each of the at least six different probe sets is specific for a different target sequence and comprises (a) at least one first probe, comprising a target-specific portion that hybridizes to a first portion of one of the at least six different target sequences, and (b) at least one second probe, comprising a target-specific portion that

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hybridizes to a second portion of the one of the at least six different target sequences, a primer-specific portion, and an addressable support-specific portion that is specific for the one of the at least six different target sequences, wherein the addressable support-specific portion is located between the primer-specific portion and the target-specific portion;

and wherein the primer-specific portions of each of the at least one second probes of each of the at least six different probe sets have identical sequences.